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## RESEARCH

## MORTALITY FROM CERVICAL CANCER IN SANTA CATARINA, BRAZIL, 2000-2010

MORTALIDADE POR CÂNCER DO COLO DO ÚTERO EM SANTA CATARINA, BRASIL, 2000-2010

LA MORTALIDAD POR CÁNCER DE CUELLO UTERINO EN SANTA CATARINA, BRASIL, 2000-2010

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## ABSTRACT

**Objective:** To describe the death rate from cervical cancer in Santa Catarina State in the 2000-2010 period.**Method:** Descriptive population-based and data obtained from the SIM / DATASUS. **Results:** The total number of deaths from cervical cancer in Santa Catarina, in the period studied, was 1382, corresponding to a mortality rate ranging from 3.6 (2006) and 4.9 (year 2000) per 100,000 women. It was found that the lowest mortality rate referred to the age group of 20-29 years old and the highest after 40 years.**Conclusions:** The data pointed to a decrease of deaths in women from cervical cancer, during the study period, and showed that higher the age the higher the death rate. **Descriptors:** Cervical Cancer, Mortality, Women's Health.

## RESUMO

**Objetivo:** Descrever a taxa bruta de mortalidade por câncer do colo do útero em Santa Catarina no período de 2000 - 2010. **Método:** Pesquisa descritiva de base populacional e dados obtidos junto ao SIM/DATASUS.**Resultados:** O número total de óbitos por câncer do colo do útero em Santa Catarina, no período estudado, foi de 1382, correspondendo a uma taxa de mortalidade que variou entre 3,6 (ano de 2006) e 4,9 (ano de 2000) por 100.000 mulheres. Verificou-se que a menor taxa de mortalidade referiu-se à faixa etária de 20-29 anos e as mais altas a partir dos 40 anos. **Conclusões:** Os dados apontaram para uma diminuição dos casos de óbitos em mulheres por câncer de colo de útero no decorrer do período estudado e apresentam ainda, que quanto maior a faixa etária maior a taxa bruta de mortalidade. **Descritores:** Câncer do colo do útero, Mortalidade, Saúde da mulher.

## RESUMEN

**Objetivo:** Describir la tasa de la mortalidad por cáncer de cuello uterino en Santa Catarina, en el período de 2000 a 2010. **Método:** Descriptivos de datos basados en la población y obtenida de la tarjeta SIM / DATASUS.**Resultados:** El número total de muertes por cáncer de cuello uterino en Santa Catarina, en el período estudiado fue de 1382, que corresponde a una tasa de mortalidad entre 3,6 (2006) y 4,9 (año 2000) por cada 100.000 mujeres. Fue posible verificar que la tasa de mortalidad más baja se refirió al grupo de edad entre 20-29 años y las más altas después de los 40 años. **Conclusiones:** Los datos apuntaron a una disminución de las muertes en mujeres por cáncer de cuello uterino durante el período de estudio y apuntaron también, que cuanto mayor la edad, más grande es la tasa bruta de mortalidad. **Descriptor:** Cáncer de cuello del útero, Mortalidad, Salud de la mujer.

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INTRODUCTION

In Brazil, according to the National Cancer Institute (NCI), the estimated number of new cases of cancer of the cervix expected for the country in the year 2012 is 17,540, with an estimated risk of 17 cases each women1 100 000 (BRAZIL, 2011). Presented herein are also estimated for each region. "Without considering the non-melanoma skin tumors, cancer of the cervix is the most frequent in the North (24/100000). In the Midwest (28/100 000) and Northeast (18/100 000) ranks second most common in the Southeast (15/100 000), the third, and in the South (14/100 000), fourth place."<sup>1:36</sup>

Regarding mortality, were recorded in 2010, 4986 (5.1 / 100,000 women) deaths in the country for cancer of the cervix. You can check the variation of cases and mortality rates in their geographic distribution, namely the North Region had 573 cases (7.3 / 100,000 women), Northeast Region, 1484 cases (5.5 / 100,000 women), Southeast Region, 1837 (4.4 / 100,000 women), Southern Region, 678 (4.9 / 100,000 women), Midwest Region, 414 (5.8 / 100,000 women).<sup>2</sup>

Screening for cervical cancer is based on the natural history of the disease and the recognition that the invasive cancer develops from precursor lesions that can be detected and treated properly, preventing progression to cancer. The main method and more widely used for screening of cervical cancer is the Pap test (Pap smear of the cervix).<sup>3</sup>

It is noteworthy that since the 1990s, efforts to control cancer in Brazil are established under the coordination of INCA. In 1998, the Ministry of Health established the National Program to Fight Cervical Cancer. The first phase of intensification occurred in the period August-September 1998, through the adoption of strategies for structuring the health care network,

establishment of an information system for the monitoring of actions (SISCOLO) and the mechanisms for mobilizing and attracting women for the prevention and early detection of disease. At this stage, more than three million women were mobilized to do the Pap smear.<sup>4</sup>

Control actions of cervical cancer are also contemplated in the National Policy on Comprehensive Health Care for Women (PNAISM), which have as one of the specific objectives to reduce cancer mortality in women. In that same document, it is argued that there is not enough simply to offer preventive exams in primary healthcare, it is also necessary to "mobilize women to appear more vulnerable to health centers and implement systems of reference for what is necessary forward".<sup>5:48</sup>

Despite all the possibilities of prevention and early detection of cancer of the cervix in INCA<sup>6:9</sup> document notes that the "system makes the management of examinations, not women, not allowing thus identify the users of care unit that have never been screened or who are not in the recommended interval. "Therefore, this represents "a continuing challenge to the sustainability of actions, reflected in the planning process and agreement on political qualification of human resources and ensuring continuity of care."

Given this situation, this article aims to describe the crude mortality rate for cervical cancer in the state of Santa Catarina in the period 2000 -2010.

METHODOLOGY

This research is descriptive, population-based and aimed to present the main crude mortality rates for cervical cancer in the state of Santa Catarina, in the period 2000-2010. The data were obtained from the Mortality Information

Paz APB, Salvaro GIJ, Cruzeta APS *et al.*

Mortality from cervical in ...

System (SIM), the Department of the Unified Health System (DATASUS).<sup>7</sup>

It should be clarified that included all cases of deaths in women who had cancer as the underlying cause of the cervix (C53) and cancer of the uterus part unspecified (C55). Such methodological guidance was followed from depicting Alves, and Bastos<sup>8:1694</sup> to report that some studies showed that "most cases of cervical cancer presented unspecified part were actually cases of cervical cancer".

Were described crude mortality rates related to the 293 municipalities of the State of Santa Catarina, according to data from the Brazilian Institute of Geography and Statistics (IBGE) of 2010.<sup>9</sup> The data were distributed by year and age groups: 15-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80 years or older. The selection of data was performed by use TabWin (DATASUS technology) to save the selections available periods and according to the research objectives.

The crude mortality rates were calculated by dividing the number of deaths from cancer of the cervix and / or uterus cancer unspecified part and the estimated population for the state of Santa Catarina in each year studied, being presented by 100 thousand inhabitants. It is noteworthy that the population figures to Santa Catarina, in the period from 2000 to 2010, distributed by age, used to calculate the mortality rates were obtained from the Department of Computer SUS, information on the topic of "demographic and socioeconomic".<sup>10</sup>

RESULTS AND DISCUSSION

From 2000-2010 were registered in the State of Santa Catarina 338,150 deaths, of which 140,140 (41.4%) were women. Counting the number of cancer deaths in women in this period has a total of 25,409 (18.1%) deaths, of which 1382 (5.4%) were related specifically to cancer of the cervix. In the tables below are shown in R. pesq.: cuid. fundam. online 2013. abr./jun. 5(2):3780-87

detail, data on mortality from cancer of the cervix.

Table 1 shows the mortality rates of cervical cancer in the state of Santa Catarina, Brazil, by age, in the period 2000-2010. We found, as shown in Table 1, the total period, a mortality rate ranging from 3.6 (2006) and 4.9 (2000) deaths per 100,000 women.

When observed data by age group, it appears that the lower mortality rate refers to the age group of 20-29 years and the highest after 40 years.

Table 1. Mortality rate (per 100,000) for cancer of the cervix (C53 \*) in the State of Santa Catarina, by age group, in 2000 and 2010.

YEAR	AGE (YEARS)							TOTAL
	20-29	30-39	40-49	50-59	60-69	70-79	> 80	
2000	0.1	4.3	13.1	10.6	14.3	22.8	35	4.9
2001	-	3.7	11.2	14.4	17.4	9.1	27.5	4.6
2002	0.1	5.4	8.9	10.8	11.3	13.8	3.3	4.0
2003	0.2	2.7	9.2	11.8	14.5	12.2	19.2	4.0
2004	0.2	3.8	8.4	10.8	10.6	11.5	17.9	3.9
2005	0.3	3.2	6.1	13.3	17.4	21.1	17.2	4.4
2006	0.3	4.1	7.7	7.1	7.3	11.4	21.5	3.6
2007	0.1	4.1	8.5	12.1	16.1	18	15.8	4.8
2008	0.3	4.1	7.3	8.1	14.9	18.4	8.5	4.3
2009	0.1	2.8	9.4	10.6	10.5	14.9	32.3	4.6
2010	1.1	3.9	8.1	9.1	9.0	12.7	7.8	4.1

\* According to the tenth revision of the International Classification of Diseases (ICD-10) Source: Information System (SIM). Available at: [http / / tabnet.datasus.gov.br / CGI / deftohtm.exe? Sim/cnv/obt10sc.def](http://tabnet.datasus.gov.br/cgi/deftohtm.exe?Sim/cnv/obt10sc.def)

As Figure 1 with respect to the gross rate of cervical cancer during the study period, one can observe two waves between the years 2005 to 2007, at ages 60 to 69 years old and 70 to 79 years old, keeping is declining in other age groups.

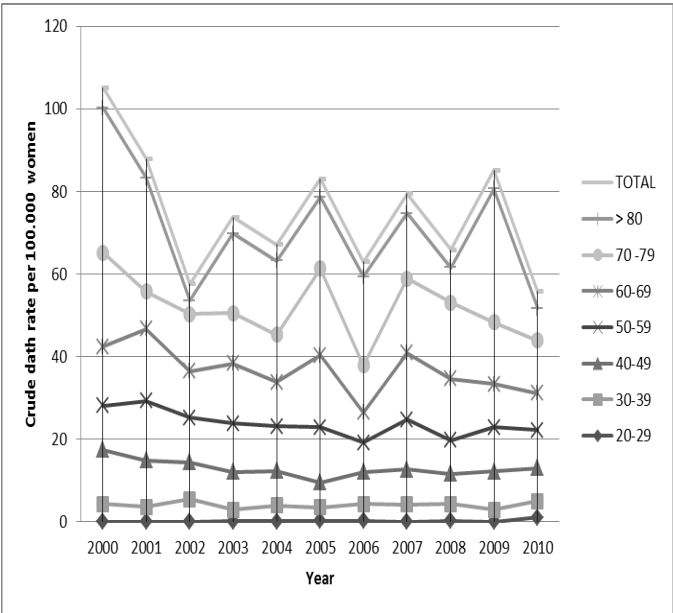


Figure 1. Crude death rate (per 100,000) for cancer of the cervix (C53 \*) in the State of Santa Catarina, by age group, in 2000 and 2010.  
\* According to the tenth revision of the International Classification of Diseases (ICD-10)  
Source: Information System (SIM). Available at: [http / / tabnet.datasus.gov.br / CGI / deftohtm.exe? Sim/cnv/obt10sc.def](http://tabnet.datasus.gov.br/cgi/deftohtm.exe?Sim/cnv/obt10sc.def)

Table 2 presents data on mortality rates for cancer of the uterus part unspecified. There are a total of 745 deaths from cancer of the uterus unspecified part in the study period, corresponding to a mortality rate ranging from 1.7 (2006) and 2.7 (2004) deaths per 100,000 women. With respect to age, has the lowest mortality rate in the age group of 20-29 years old and the highest after 50.

Table 2. Crude death rate (per 100,000) for cancer of the uterus part unspecified (C55 \*) in the State of Santa Catarina, by age, in the period 2000-2010.

YEAR	AGE (YEARS)							TOTAL
	20-29	30-39	40-49	50-59	60-69	70-79	> 80	
2000	-	1,6	3,3	7,2	8,3	13,4	31,5	2,3
2001	-	1,3	2,9	7,1	8,1	25,0	20,6	2,4
2002	0,4	0,6	3,5	7,9	13,2	16,9	20,4	2,6
2003	-	0,8	2,3	6,9	7,9	15,4	36,8	2,1
2004	0,6	0,4	3,1	10,0	10,7	21,5	26,4	2,7
2005	-	1,2	3,3	7,0	9,0	28,3	22,4	2,6
2006	-	0,6	2,7	4,3	8,2	12,1	22,1	1,7
2007	0,2	1,1	2,3	6,0	8,6	16,0	22,6	2,5
2008	0,2	1,1	2,7	6,8	6,6	7,7	12,8	2,1
2009	0,2	0,6	3,1	4,0	8,9	10,2	20,2	2,2
2010	0,2	0,8	2,6	5,9	7,0	9,1	13,7	2,2

\* According to the tenth revision of the International Classification of Diseases (ICD-10)

Source: Information System (SIM). Available at: [http / / tabnet.datasus.gov.br / CGI / deftohtm.exe? Sim/cnv/obt10sc.def](http://tabnet.datasus.gov.br/cgi/deftohtm.exe?Sim/cnv/obt10sc.def)  
Fonte: Sistema de Informação de Mortalidade (SIM). Disponível em: [http/ / tabnet.datasus.gov.br/CGI/deftohtm.exe?sim/cnv/obt10sc.def](http://tabnet.datasus.gov.br/CGI/deftohtm.exe?sim/cnv/obt10sc.def)

Observing in Figure 2 by the gross cases of cancer of the uterus part unspecified, found that since 2003, at the age of 70 to 79 and 80 and older had an increased number of cases to the 2005, followed by decline with small oscillations.

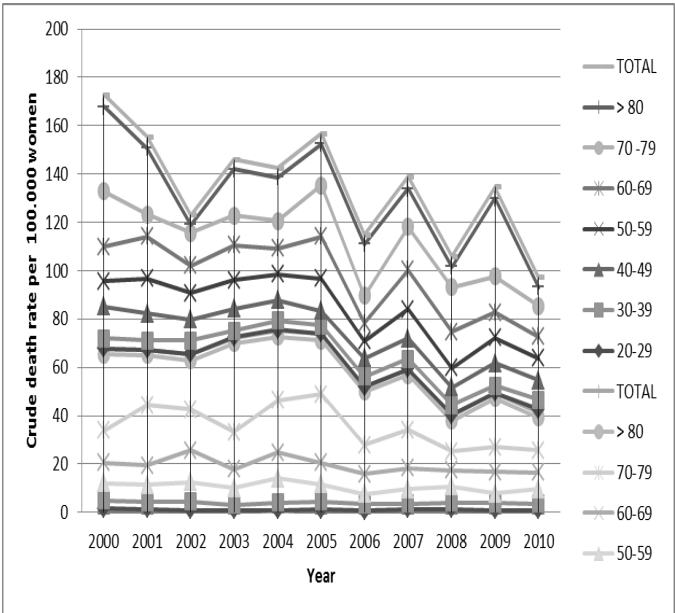


Figure 2. Crude death rate (per 100,000) for cancer of the uterus part unspecified (C55 \*) in the State of Santa Catarina, by age, in the period 2000-2010.

\* According to the tenth revision of the International Classification of Diseases (ICD-10)  
Source: Information System (SIM). Available at: [http / / tabnet.datasus.gov.br / CGI / deftohtm.exe? Sim/cnv/obt10sc.def](http://tabnet.datasus.gov.br/cgi/deftohtm.exe?Sim/cnv/obt10sc.def)

The sum of the data regarding the number and the crude death rate from cancer of the cervix and cancer of the uterus unspecified part is presented in Table 3. There were a total of 2,127 deaths in the period from 2000 to 2010 corresponding to a mortality rate ranging from 5.3 (2006) 7.7 and (2000) deaths per 100,000 women. As data by age group, presented in Table 3, the lowest mortality rate can be observed in the range 20 - 29 years and the highest from 40. Also with respect to the sum of crude mortality rates for cancer of the cervix and cancer of the uterus part unspecified, one can observe in Figure

3 that in the period studied for existence of two waves between the years 2005 to 2007, the range aged 70 to 79 years, maintaining downward in other age groups.

Table 3. Crude death rate from cancer of the cervix (C53 \*) and cancer of the uterus part unspecified (C55 \*) in the State of Santa Catarina, by age group, in the period 2000-2010.

YEAR	AGE (YEARS)							TOTAL
	20-29	30-39	40-49	50-59	60-69	70-79	> 80	
2000	0.4	5.8	16.4	17.8	22.6	36.2	66.4	7.7
2001	-	5.1	14.3	21.7	25.9	34.3	48.1	7.1
2002	0.6	6.1	12.7	19.1	24.8	31.2	23.7	6.5
2003	0.6	3.4	11.9	19.3	23.1	28.2	56.9	6.2
2004	1.2	4.4	12.3	21.8	22.1	34.2	46.3	6.7
2005	1.0	4.5	10.0	21.6	27.7	51.7	41.7	7.1
2006	1.0	4.4	11.2	13.0	16.3	25.5	50.6	5.3
2007	0.4	5.1	10.8	18.1	24.7	34.0	38.4	7.3
2008	0.9	5.2	10.0	14.9	21.5	26.1	21.4	6.4
2009	0.4	3.4	12.6	14.6	19.5	25.2	52.5	6.8
2010	1.2	4.7	10.7	15.0	16.0	30.8	21.6	6.3

\* According to the tenth revision of the International Classification of Diseases (ICD-10)  
Source: Information System (SIM). Available at: [http / / tabnet.datasus.gov.br / CGI / defptohtm.exe? Sim/cnv/obt10sc.def](http://tabnet.datasus.gov.br/cgi/defptohtm.exe?Sim/cnv/obt10sc.def)

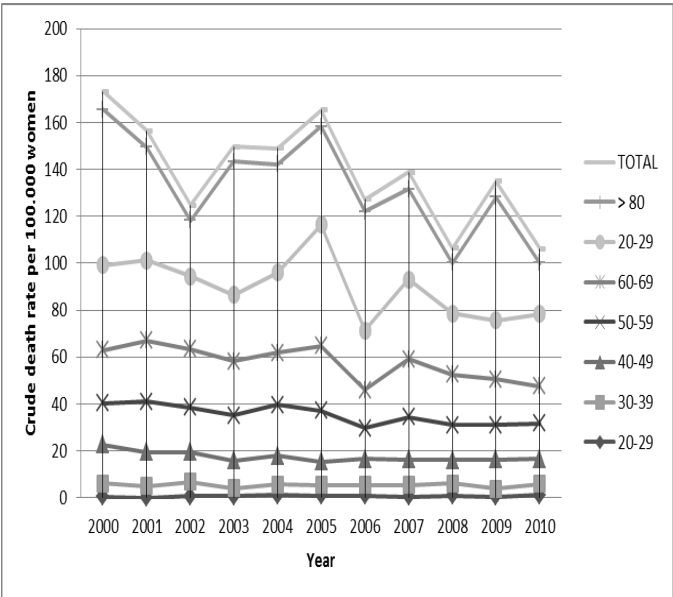


Figure 3. Mortality rate for cancer of the cervix (C53 \*) and cancer of the uterus part unspecified (C55 \*) in the State of Santa Catarina, by age group, from 2000-2010.

\* According to the tenth revision of the International Classification of Diseases (ICD-10)  
Source: Information System (SIM). Available at: [http / / tabnet.datasus.gov.br / CGI / defptohtm.exe? Sim/cnv/obt10sc.def](http://tabnet.datasus.gov.br/cgi/defptohtm.exe?Sim/cnv/obt10sc.def).

The presented data regarding cancer mortality of cervical and uterine cancer unspecified part in the period 2000-2010, the State of Santa Catarina were calculated from numbers and crude rates.

Study presented by Arzuaga-Salazar et al.<sup>11</sup> showed similar data with regard to cancer of the cervix in the State of Santa Catarina. The study, however, did not present data on the numbers and mortality rates for cancer of the uterus part unspecified.

In Rio Grande do Sul, research by Kalakun Bozzetti<sup>12</sup> and from 1979 to 1998, recorded a total of 4829 deaths from cancer of the cervix and an average mortality rate of 7.58 / 100,000 women in the period. In this study, analysis of the crude death rates for cancer of the cervix showed an increase of 5.3 / 100,000 in 1979 to 9.6 / 100,000 in 1998.

You can see data in other regions of Brazil. In São Paulo, Fonseca Neto Ramacciotti and note<sup>13</sup> that there were no significant changes in mortality rates in the period 1980-1999, which ranged between 5 and 5.5 per 100,000 women.

The study by Alves, Bastos Guerra and in the period 1980-2005, in the State of Minas Gerais, showed that of the 12,606 deaths in the study, 6,734 (53.42%) were due to cancer of the cervix and 5872 (46.8%) for cancer of the uterus part unspecified. Mortality rates for cervical and uterine unspecified part in 1980 was 9.18 deaths per 100,000 women, and in 2005 was 5.7 deaths per 100,000 women.

Also in Minas Gerais, specifically for the city of Juiz de Fora / MG, Rodrigues and research by Bustamante-Teixeira, from 1980 to 2006 for cancer of the cervix, observed mortality rates of 3.6 deaths per 100,000 women in 2003 and, in 1982, 12.5 deaths per 100,000 women.

In the State of Bahia, specifically in the city of Salvador, a study by Santos and Rego shows that among cases of cancer deaths in the period 1980-2007, 8.5% were due to cancer of the cervix,



Paz APB, Salvaro GIJ, Cruzeta APS *et al.*

*Mortality from cervical in ...*

this index higher than found in this study was 4.3%. The crude mortality rates ranged from 6.34 in Salvador / 100,000 in 1980 to 6.43 / 100,000, in 2007.

In the period 2000-2004, Mendonça et al.<sup>16</sup> recorded 323 deaths from cervical cancer in Recife, and most of these are distributed in the age groups below 60 years (54.7%), predominantly ages of 40 and 49 (20.1%) and 50 to 59 (20.4%) years. The overall mortality rate of the municipality was 8.2 / 100,000 women, ranging from 0.3 / 100,000 women under 30 years and 54.9 / 100,000 women aged over 80 years.

A study by Basil Mattos and about the evolution of cancer mortality in older women in the South and Southeast, in the period 1980-2005, specifically in relation to cancer of the cervix (2003-2005), presents significant data. In the South, the mortality rates for the age groups 60-69, 70-79 and above 80 years are respectively 19.9, 20.9 and 24 per 100,000 women. In the Southeast mortality rates in these same age groups are respectively 16.1, 20.3 and 25.7 per 100,000 women.

When considering Brazil as a whole, Thuler<sup>18</sup>, from data released by the Ministry of Health, from 1979 to 2005, shows that mortality rates adjusted for age increased from 4.97 to 5.29 per 100,000 women, representing an increase 6.4% in 26 years.

**CONCLUSION**

At the end of the study we conclude that increasing age is associated with increased number of cases both with regard to cancer of the cervix (C53) as in cervical cancer unspecified part (C55). We further note that, in the years studied, the data fluctuate on the waveform, but keeping the decline during the period 2000 to 2010. In the period from 2005 to 2007, with respect to the gross rate of cancer of the cervix, there are

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two waves that comprise the age groups 60-69 years and 70-79 years, remaining decline in other age groups.

In individuals aged 70 to 79 years and 80 years and more, the gross rate for cases of cancer of the uterus part unspecified showed an increase from 2003, until the year 2005, following a decline with minor variations.

The gross rates of both cancers surveyed reveal that the higher the age, higher rates and the waves, but with a declining trend. The age group 80 years and older has a higher elevation in the incidence, distancing itself from others. It considers that the highest mortality rates are related to a reduction in the total number of women population of the State of Santa Catarina, in the age groups 40 to 80 years or more.

Accordingly, research has importance to the State of Santa Catarina therefore reveals decrease of deaths from cancer in women cervical and uterine portion not identified during the years studied. It also presents the higher the age the higher the mortality rate for this type of cancer.

**REFERENCES**

1. Ministério da Saúde (Brasil). Instituto Nacional do Câncer. Coordenação Geral de Ações Estratégicas. Coordenação de Prevenção e Vigilância. Estimativa 2012: incidência de câncer no Brasil. Rio de Janeiro: INCA, 2011. 118 p. [acesso em 18 jun 2012]. Disponível em: <<http://www.inca.gov.br/estimativa/2012/estimativa20122111.pdf>>.

2. Ministério da Saúde (Brasil). DATASUS. Informações de Saúde: Mortalidade - Brasil. [acesso em 16 jul 2012]. Disponível em: <http://tabnet.datasus.gov.br/cgi/tabcgi.exe?sim/cnv/obt10uf.def>.

3. Crum CP. Aparelho Genital Feminino. In: Vinay K, Abbas AK, Fausto N, editores. Robbins e

Cotran: Patologia: Bases Patológicas das Doenças. 7.ed. Rio de Janeiro: Elsevier, 2005, p.1105-1167.

4. Ministério da Saúde (Brasil). Instituto Nacional do Câncer. Programa Nacional de Controle do Câncer do Colo do Útero. [acesso em 05 ago 2011]. Disponível em: [http://www2.inca.gov.br/wps/wcm/connect/acoes\\_programas/site/home/nobrasil/programa\\_nacional\\_controle\\_cancer\\_colo\\_uterio/historico\\_acoes](http://www2.inca.gov.br/wps/wcm/connect/acoes_programas/site/home/nobrasil/programa_nacional_controle_cancer_colo_uterio/historico_acoes)

5. Ministério da Saúde (Brasil). Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. Política nacional de atenção integral à saúde da mulher: princípios e diretrizes. Brasília: Editora do Ministério da Saúde, 2004. [acesso em 28 jun 2010]. Disponível em: [http://portal.saude.gov.br/portal/arquivos/pdf/Polit\\_Nac\\_At\\_In\\_Saude\\_Mulher\\_Princ\\_Diretr.pdf](http://portal.saude.gov.br/portal/arquivos/pdf/Polit_Nac_At_In_Saude_Mulher_Princ_Diretr.pdf)

6. Ministério da Saúde (Brasil). Instituto Nacional do Câncer. Plano de ação para redução da incidência e mortalidade por câncer do colo do útero: sumário executivo. Rio de Janeiro: INCA, 2010. [acesso em 02 jul 2012]. Disponível em: [http://www1.inca.gov.br/inca/Arquivos/sumario\\_colo\\_uterio-versao\\_2011.pdf](http://www1.inca.gov.br/inca/Arquivos/sumario_colo_uterio-versao_2011.pdf).

7. Ministério da Saúde (Brasil). DATASUS. Informações de Saúde: Mortalidade - Santa Catarina. [acesso em 18 jun 2012]. Disponível em: <http://tabnet.datasus.gov.br/cgi/deftohtm.exe?sim/cnv/obt10sc.def>

8. Alves CM, Guerra M R, Bastos, R R. Tendência de mortalidade por câncer de colo de útero para o Estado de Minas Gerais, Brasil, 1980-2005. Cad. Saúde Pública [periódico na internet]. 2009 Ago [acesso em 2011 ago 01]; 25(8): 1693-1700. Disponível em: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0102-311X2009000800005&lng=pt&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2009000800005&lng=pt&nrm=iso)

9. Instituto Brasileiro de Geografia e Estatística (Brasil). Estados - Santa Catarina. [acesso em 10 nov 2011]. R. pesq.: cuid. fundam. online 2013. abr./jun. 5(2):3780-87

Disponível em: <http://www.ibge.gov.br/estadosat/perfil.php?sigla=sc>

10. Ministério da Saúde (Brasil). DATASUS. Informações de Saúde: População residente - Santa Catarina. [acesso em 18 jun 2012]. Disponível em: <http://tabnet.datasus.gov.br/cgi/deftohtm.exe?ibge/cnv/popsc.def>

11. Arzuaga-Salazar MA, Souza ML, Martins HEL, Locks MTR, Monticelli M, Peixoto HG. Câncer de colo do útero: mortalidade em Santa Catarina - Brasil, 2000 a 2009. Texto Contexto Enferm. [periódico na internet]. 2011 jul-set [acesso em 2012 jul 02]; 20(3): 541- 6. Disponível em: <http://www.scielo.br/pdf/tce/v20n3/16.pdf>.

12. Kalakun L; Bozzetti MC. Evolution of uterine cervical cancer mortality from 1979 to 1998 in the State of Rio Grande do Sul, Brazil. Cad. Saúde Pública [periódico na internet]. 2005 fev [acesso em 2012 jul 02]; 21(1): 299-309. Disponível em: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0102-311X2005000100033&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2005000100033&lng=en&nrm=iso).

13. Fonseca LAM, Ramacciotti AS; Eluf J Neto. Tendência da mortalidade por câncer do útero no Município de São Paulo entre 1980 e 1999. Cad. Saúde Pública [periódico na internet]. 2004 fev [acesso em 2012 jul 02]; 20 (1): 136-42. Disponível em: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0102311X2004000100029&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102311X2004000100029&lng=en&nrm=iso).

14. Rodrigues AD, Bustamante-Teixeira MT. Mortalidade por câncer de mama e câncer de colo do útero em município de porte médio da Região Sudeste do Brasil, 1980-2006. Cad. Saúde Pública [periódico na internet]. 2011 fev [acesso em 2012 jul 02]; 27 (2): 241- 48. Disponível em: <http://www.scielo.br/pdf/csp/v27n2/05.pdf>.

15. Santos r AC Jr; Rêgo MAV. Tendência da mortalidade por câncer de colo do útero em Salvador e no Estado da Bahia, Brasil, de 1980 a



Paz APB, Salvaro GIJ, Cruzeta APS *et al.*

*Mortality from cervical in ...*

2007. Rev. Baiana de Saúde Pública [periódico na internet]. 2011 jul-set [acesso em 2012 jul 2012]; 35 (3): 722-33. Disponível em: <http://files.bvs.br/upload/S/0100-0233/2011/v35n3/a2648.pdf>.

16. Mendonça VG, Lorenzato FRB, Mendonça JG, Menezes TC, Guimarães MJB. Mortalidade por câncer do colo do útero: características sociodemográficas das mulheres residentes na cidade de Recife, Pernambuco. Rev. Bras. Ginecol. Obstet. [periódico na internet]. 2008 mai [acesso em 2012 jul 02]; 30(5): 248-55. Disponível em:

[http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0100-72032008000500007&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-72032008000500007&lng=en&nrm=iso).

17. Basilio DV; Mattos IE. Câncer em mulheres idosas das regiões Sul e Sudeste do Brasil: Evolução da mortalidade no período 1980 - 2005. Rev. bras. epidemiol. [periódico na internet]. 2008 jun [acesso em 2012 jul 02]; 11(2): 204-14. Disponível em:

[http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1415-790X2008000200003&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1415-790X2008000200003&lng=en&nrm=iso).

18. Thuler LCS. Mortalidade por câncer do colo do útero no Brasil. Rev. Bras. Ginecol. Obstet. [periódico na internet]. 2008 mai [acesso 2012 jul 02]; 30(5): 216-18. Disponível em: <http://www.scielo.br/pdf/rbgo/v30n5/a02v30n5.pdf>.

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